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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/820,348  | 04/07/2004  | Roberto Aiello       | 012DIV-124          | 8143             |
| 44279   | 7590        | 06/15/2005           | EXAMINER            |                  |
| PULSE-LINK, INC.<br>1969 KELLOGG AVENUE<br>CARLSBAD, CA 92008 |             |                      | AHN, SAM K          |                  |
|   |             |                      | ART UNIT            | PAPER NUMBER     |

2637

DATE MAILED: 06/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                               |                               |  |
|------------------------------|-------------------------------|-------------------------------|--|
| <b>Office Action Summary</b> | Application No.<br>10/820,348 | Applicant(s)<br>AIELLO ET AL. |  |
|                              | Examiner<br>Sam K. Ahn        | Art Unit<br>2637              |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on amendment, 02/18/05.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 021805.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments filed 02/18/05 with respect to the rejection of claims 1-10 under 102(e) have been fully considered but they are not persuasive. On pages 8-9, applicants argue that Dress does not teach "reducing a clock speed" or does not teach "frequency divider to generate a pulse repetition frequency". The examiner respectfully disagrees. Dress teaches, as explained previously, at least one frequency divider (1005,1003) configured to reduce said clock speed to generate a desired pulse repetition frequency (note col.8, line 43 – col.9, line 4). It is well-known in the art that the function of the frequency divider (1005,1003) delaying of a master clock to produce a delayed clock is equivalent to the function of "reducing a clock speed" to produce a desired clock. Dress teaches a frequency divider by the implementation of a programmable delay (1240) and pseudorandom polynomial generator (1220, note col.10, lines 51-55). Thus, Dress teaches the frequency divider (1005,1003) configured to reduce said clock speed to generate a desired pulse repetition frequency.
2. Applicant's arguments, see p.9-10, filed 02/18/05, with respect to the rejection(s) of claim(s) 11-15 under 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Richards et al. USP 6,300,903 B1 and Liebetreu (cited previously).

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1-10 are rejected under 35 U.S.C. 102(e) as being anticipated by Dress, Jr. et al. USP 6,603,818 B1 (Dress).

Regarding claims 1 and 6, Dress discloses a transmitter MAC layer (see Fig.10) comprising a clock synchronization unit (1001,1002) having a timing device with a clock speed, at least one frequency divider (1005,1003) coupled to said clock synchronization unit, said frequency divider configured to reduce said clock speed to generate a desired pulse repetition frequency (note col.8, line 43 – col.9, line 4), at least one slot allocation unit (1004) coupled to said at least one frequency divider, and a multiplexer/demultiplexer (1008,1009) operatively coupled to said at least one slot allocation unit, said multiplexer/demultiplexer configured to merge a plurality of outgoing signals (note col.9, lines 47-56).

It is well-known in the art that the function of the frequency divider (1005,1003) delaying of a master clock to produce a delayed clock is equivalent to the function of “reducing a clock speed” to produce a desired clock. Dress teaches a frequency divider by the implementation of a programmable delay (1240) and

pseudorandom polynomial generator (1220, note col.10, lines 51-55). Thus, Dress teaches the frequency divider (1005,1003) configured to reduce said clock speed to generate a desired pulse repetition frequency.

Regarding claims 2 and 7, Dress teaches all subject matter claimed, as applied to claim 1 or 6. Dress further teaches wherein each of said at least one slot allocation unit has a particular pulse repetition frequency (note col.8, line 57 – col.9, line 16)

Regarding claims 3-5 and 8-10, Dress teaches all subject matter claimed, as applied to claim 1 or 6. Dress further teaches wherein each of said at least one slot allocation unit is configured to support different modulation techniques (note col.9, lines 17-46).

2. Claim 11 is rejected under 35 U.S.C. 102(e) as being anticipated by Richards et al. USP 6,300,903 B1 (Richards).

Regarding claim 11, Richards teaches a ultra wide band MAC layer (see Figs.9A and 9B generated from each TM-UWB transmitter as illustrated in Fig.6) comprising a time division multiple access frame (Fig.9B) comprising a plurality of slots (92B, 94B, 96B and 98B), with each slot configured to receive at least one ultra wide band pulse (note col.12, lines 4-43, Radio communicating with each other through each respective slots).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Richards et al. USP 6,300,903 B1 (Richards) in view of Liebetreu et al. USP 6,735,734 B1 (cited previously).

Regarding claim 12, Richards teaches all subject matter claimed, as applied to claim 11. Although Richards teaches UWB implementing time division multiple access frames, as explained above, Richards does not explicitly teach the TDMA frames operating in an aloha mode.

Liebetreu teaches wherein the time division multiple access frame operates in aloha mode (note col.5, lines 10-30). Therefore, it would have been obvious to one skilled in the art at the time of the invention to operate the TDMA frames of Richards in aloha mode for the purpose of increasing control in the system, as taught by Liebetreu (note col.5, lines 14-18).

Regarding claims 13-15, Richards teaches all subject matter claimed, as applied to claim 11. However, Richards does not explicitly teach wherein an ultra wide band pulse repetition, position or amplitude varies between different slots.


Liebetreu teaches wherein different modulation types may be implemented (note acol.7, line 60 – col.8, line 13) and further teaches wherein each slot would be capable of having different modulation technique (note acol.5, line 57 – col.6, line 8). Therefore, it would have been obvious to one skilled in the art at the time of the invention to modify the system of Richards to incorporate the teaching of Liebetreu of having different modulation of technique of the different slots for the purpose of decreasing the interference that may be caused by other transceivers in the system (note col.5, lines 50-52).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sam Ahn whose telephone number is (571) 272-3044. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on (571) 272-2988. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sam K. Ahn  
6/10/05

  
TEMESGHEH GHEBRETINSAE  
PRIMARY EXAMINER  
6/12/05